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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,954	10/06/2003	Ezra J. Rapoport	14501-004001	3563

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EXAMINER	
ABEBE, DANIEL DEMELASH	
ART UNIT	**PAPER NUMBER**
2626	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/30/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/679,954	RAPOPORT, EZRA J.	
	Examiner	Art Unit	
	Daniel D. Abebe	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Meisel et al. (5,054,085).

As to claim 1, Meisel teaches a method for speech parameter enrolling in a speech recognition system, comprising the steps of:

Determining speech parameters (principal component) representing amongst other speech characteristics, consecutive pitch periods/formant parameters (a component representing the pitch period) (Fig.2, 35, 36 and 37);

Storing the parameter; and during recognition

Comparing input parameter with said enrolled parameter for the purpose of recognizing the word.

(abstract; Col.2, line 65-Col.3, line 20; Col.5, lines 43-58; Col.7, lines 5-20; fig.10).

according to Meisel pitch tracking is conducted as explained below.. "To perform pitch detection, as will be discussed in detail below, this invention uses a filter, but one which is unusual in not being a conventional lowpass or bandpass filter designed to approximate a rectangular filter. Since the fundamental frequency range of a single speaker in ordinary speech varies by two octaves, no lowpass or bandpass filter, no matter how rectangular, can reject all the higher harmonics for the highest fundamental in the speaker's range without also admitting at least the second, third, and fourth harmonics

for the lowest fundamental in the speaker's range. However, if the fundamental component is only being extracted for period estimation by interpeak interval measurement, the complete suppression of all higher harmonics is unnecessary; the higher components must merely be attenuated to the extent that they are unable to contribute independent peaks to the extracted fundamental signal. In this connection, this invention utilizes a specially designed filter which, rather than attempting to reject all higher harmonics, merely attenuates them to an amplitude relative to the fundamental at which they are incapable of contributing peaks to the signal. This is very advantageous, since a rudimentary peak-picking algorithm then suffices to give an accurate measure of the fundamental period, requiring none of the usual preprocessing by thresholding and correlation, nor any of the postprocessing cleanup familiar to those skilled in the art."

And further where the pitch period is parameterize to create data for matching in a speaker independent speech recognition environment.

> "By creating data for recognition which is somewhat speaker independent, better use of system resources is made. Because the algorithms can be tuned to a specific speaker, they can be made more efficient and more accurate at the same time because they do not have to operate in such a way as to be invulnerable to all conditions they might encounter with varying speakers. For example, the pitch algorithm is both more accurate and more efficient because it utilizes knowledge of the pitch range of the specific speaker. The bands created for spectral analysis are all relevant because they are adjusted to the range of the speaker; therefore, bands do not exist which are outside the relevant range of interest for a specific speaker. As a result, in the present invention, system resources used in creating the bandpass parameters are efficiently utilized.
>
> Because of the accuracy of the pitch algorithm, the data rate can be adapted to be pitch synchronous with some confidence. The data is thus adjusted to the specific speaker and at an optimal data rate for that speaker. Since doing this effectively without creating problems requires an accurate pitch algorithm, this is most effectively achieved by the invention disclosed herein whereby the pitch algorithm is adjusted to the specific speaker. Similarly the spectrum and certain time domain features can be smoothed using the pitch information as long as it is accurate. In the sense that the present invention provides a more accurate pitch estimate, this data reduction is made into a practical reality rather than simply a theoretical one."

as to claim 2, Meisel teaches the step of detecting pitch periods.

As to claim 3, Meisel teaches where the parameters are stored for speech recognition.

As to claims 4-5, Meisel teaches where the speech processing system includes, data acquisition section, acoustic processing section, phonetic processing section and phoneme to text converting section for generating text (Fig.1).

Claims 6-15 are analogous to claims 1-5 and are rejected for the foregoing reasons by Meisel.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 11 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed term, machine, for use to read the instruction stored on the article is non statutory. The examiner suggests changing to "computer".

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel D. Abebe whose telephone number is 571-272-7615. The examiner can normally be reached on monday-friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Daniel Abebe Primary Examiner A.U. 2626

March 20, 2007